

131579

FAA-01-8994-112

To: Randall Petersen at AWAIR100
Priority: Normal
Subject: Re: Fw: HAI Comment of 8-7-2000 to Docket 28703

28703

OFFICE OF THE
ATTORNEY GENERAL
U.S. DEPARTMENT OF JUSTICE

200 AUG 13 10 4: 23

> > > ----- Original Message -----

> > > From: Joe Corrao <joe.corrao@rotor.com>

> > > To: FAA Public Dockets <9-nprm-cmts@faa.gov>

> > > Sent: Monday, August 07, 2000 5:59 PM

> > > Subject: Re: HAI Comment of 8-7-2000 to Docket 28703

28703

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> > >

> > > > Sir or Madam:

> > > >

> > > > Please accept the attached four documents for filing in Docket No.
> > 29803.

> > > > The attached documents are HAI's comment of 8-7-2000 to Docket No.
> > 29803,

> > > > and three attachments thereto. All documents are in MSWord 2000
> format.

> > > If

> > > > you have any difficulty opening any of these documents, please
> contact:

> > > >

> > > > Joe Corrao

> > > > Vice President, Regulations & International Affairs

> > > > Helicopter Association International

> > > > 1635 Prince Street

> > > > Alexandria VA 22314

> > > > Tel: 703-683-4646

> > > > Fax: 703-683-4745

> > > > Email: joe.corrao@rotor.com

> > > >

> > > > Thank you for your consideration.

> > > >



RFC822.TXT



Attachment 1 to HAI
Comment of 8-7-2000



8-7-2000 Docket No
28903 HAI Comment in



Attachment 2 to HAI
Comment of 8-7-2000



Attachment 3 to HAI
Comment of 8-7-2000



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Dedicated to the advancement of the civil helicopter industry

and representatives of the general aviation community withdrew from participation in ICPTF activities. Unfortunately, the proposed rule applied, and this final rule applies, to rotorcraft manufactures, repair stations and mechanics that modify rotorcraft, as well as general aviation manufacturers, and repair stations and mechanics that modify general aviation airplanes. As a result, HAI became involved in the extensive debate concerning this rule at the time comments on the notice of proposed rulemaking were under discussion.

During these debates, it became apparent that there is considerable controversy over the definition of a "non-significant change." During the July, 1998, final meeting of the Aviation Rulemaking Advisory Committee (ARAC) working group that took over this task from ICPTF, FAA provided a facilitator to mediate an agreement on the definition of "non-significant change." The consensus reached by the group at that time was that the definition must include two, and only two, elements:

- (1) The general configuration and principles of construction are retained; and
- (2) The assumptions used for certification of the product to be changed remain valid.

We are pleased that these criteria have been retained in the final rule. However, the final rule introduces two additional criteria for determining significance of change that were specifically rejected at the final ARAC meeting. These additional criteria appear at new 14 CFR § 21.101(b)(1), which states that a determination of significance will consider "all relevant design changes and all related revisions to the applicable regulations." These elements were discussed at length by the working group and rejected by the vast majority of the group as inappropriate in the determination of significance.

As HAI has noted in comments not referenced in the preamble to the final rule, these criteria are "illogical, unworkable and contrary to the ARAC consensus." *HAI memorandum to Mr. William Schultz, Assistant Chair for ARAC 21 Issues, re: "Type Certification Procedures for Changed Products: Comments Regarding the Disposition of Public Comments on the Draft Final Rule, Draft of August 4, 1998," dated August 20, 1998, at p. 2.*²

Reference to intervening regulation changes is "illogical because a later amendment of a regulation is a legal event, while an 'assumption used for certification' is an engineering fact. No subsequent legal event can possibly change an engineering fact. . . . [U]nworkable because, according to its terms, every proposed change to a product will be rendered 'significant' by every change in applicable regulations adopted since certification of the product." *Id.* In a subsequent comment, HAI observed that,

"Whether the general configuration and principles of construction are retained is an inquiry the answer to which is not affected by an intervening amendment to an applicable

² A copy of this document accompanies this comment for your convenience.

certification regulation. Configuration and construction principles are matters of historical engineering fact that are not altered by subsequent changes in regulations.

"The assumptions used for certification of the product are validated or invalidated by the product's post-certification service history, not by regulatory fiat. If post-certification service history indicates that an unsafe condition exists, the aircraft is subjected to remedial requirements through an Airworthiness Directive (AD). If a change is proposed to such an aircraft, the service history that invalidated the previous certification assumption is accounted for through consideration of the AD. No separate review of post-certification regulation changes is necessary.

"Moreover, in determining whether a proposed change is nonsignificant, a separate review of post-certification regulation changes necessarily leads to the erroneous conclusion that all proposed changes to the aircraft are significant. FAA must justify each amendment it promulgates to regulations. In a review that focuses on intervening regulatory amendments -- that is, amendments to applicable regulations adopted between the time the product was certificated in the configuration to be changed and the time the change under review is proposed -- every amendment must be seen as rendering each proposed change significant in light of the justification for that amendment.

"However, if an unsafe condition had existed, an AD would have been issued against the aircraft. If no unsafe condition exists, there is no reason, based on service history, to consider any certification assumption invalid. Separate consideration of intervening regulatory amendments is a red herring, a distractor that leads to erroneous conclusions.

"These erroneous conclusions -- that a proposed change is significant when it is not -- make this provision of the final rule entirely unworkable. FAA and the Joint Aviation Authorities (JAA) have agreed with Industry that periodic recertification of an aircraft with an acceptable service history would be unnecessarily and unacceptably burdensome. Separate consideration of intervening amendments would provoke recertification regardless of acceptable service history, a back-door way of imposing the burdens of periodic recertification under another name.

"FAA's proposed statement is contrary to the consensus of the ARAC working group. The working group concluded, and repeatedly confirmed, that the 'change' that is the subject matter of the proposed rule and the triggering event for a certification evaluation, is a proposed change to the product, not a change in the regulations."

HAI memorandum to Mr. William Schultz, Assistant Chair for ARAC 21 Issues, re: "Type Certification Procedures for Changed Products: Supplementary Comments Regarding the Disposition of Public Comments on the Draft Final Rule, Draft of August 4, 1998," dated September 1, 1998, at pp. 1- 2.³

³ A copy of this document accompanies this comment for your convenience.

Similarly, the requirement to separately consider "all relevant design changes" is illogical because "Whether the general configuration and principles of construction are retained will be evident upon evaluation of the latest proposed change in comparison to the product as most recently certificated. No separate 'summing' of the effects of incremental changes is necessary." *Id. at 2*. It is unworkable because "such an exercise is standardless and subjective without reference to the state of the product before the proposed change." *Id. at 3*.

As HAI further explained,

"Whether the assumptions used for certification remain valid is evident upon evaluation of the product as most recently certificated in comparison to the specifications that will result if the change is performed as proposed. Even if an incremental change is small, if it results in a specification that is outside the parameters of earlier assumptions, this fact will be evident upon consideration of the proposed change itself; no separate summing of effects of earlier changes is necessary.

* * *

"The proposed provision quoted above will have the effect of triggering recertification whenever the proposed change affects a previously changed area of the product, or strikes someone in authority as 'large' in the abstract, regardless of whether the general configuration and principles of construction are retained, and whether the assumptions used for certification remain valid. This result is contrary to the consensus of the ARAC Working Group, does not promote safety, and will impose unnecessary economic hardship on manufacturers, modifiers and owners of type certificated products."

Id. at 3.

The two additional criteria found at section 21.101(b)(1) have the potential for considerable expansion of the number of changes that would be classified as significant. No safety basis exists for this result. Cost data submitted to the FAA for their economic evaluation were based on the assumption that only the criteria for change agreed to at the last ARAC working group meeting would apply. The additional two criteria introduced at section 21.101(b)(1) invalidate this assumption, and have the potential for significant escalation of the economic impact of this rule.

Under these circumstances, HAI strongly believes that an adequate measure of relief from this final rule must be provided for the rotorcraft industry. The relief provided for rotorcraft in section 21.101(c) of the final rule is entirely inadequate and unfairly penalizes small businesses that own, operate or modify rotorcraft, particularly in comparison to the greater measure of relief granted to all other aircraft. If meaningful relief is not provided for rotorcraft, safety-enhancing modifications of existing rotorcraft will be substantially discouraged by application of the final

rule, and small businesses that own, operate or modify rotorcraft will be harmed economically without adequate safety justification.

In documents submitted to the ARAC Working Group, HAI showed that during the past 10 years, not one rotorcraft accident has been attributed to a weakness in the certification procedure for changes. This finding is based on review of ten years of accident data compiled by the National Transportation Safety Board (NTSB) and culled from NTSB data files by both NTSB itself and the National Aviation Safety Data Analysis Center (NASDAC). There is no documented safety justification for application of the final rule to rotorcraft.

The distinction drawn between rotorcraft and all other aircraft in the final rule is not supported by data. The relief granted to fixed-wing operators in the final rule is in recognition of the fact that the final rule may impose costs that discourage small businesses from undertaking safety-enhancing changes to their aircraft. The same concern is compelling in the rotorcraft world.

As HAI pointed out in its letter of June 26, 1998, to Ms. Sharon Miles, a proper measure of relief for rotorcraft "does not mean exclusion from the certification process; it means only that recertification of an aircraft or other certificated product resulting from a change would be conducted against the original certification standards when these . . . [are] . . . technically applicable, and that later standards would be applied when necessary."

HAI believes that the economic consequences of the final rule will be extremely and unjustifiably detrimental to many small business that own, operate or modify rotorcraft unless the measure of relief granted to rotorcraft is increased. HAI believes that rotorcraft should be granted exclusion from the final rule on the same basis as all other aircraft: all rotorcraft of less than 6000 pounds maximum weight should be excluded from application of the final rule regardless of engine configuration.

HAI is greatly disappointed that the final rule fails to reflect the input of many aviation organizations, including rotorcraft and general aviation manufacturers, operators, repair stations, mechanics and their respective representative organizations. We understand that manufacturers of transport category airplanes who participated in all the deliberations of the ICPTF and the ARAC Working Group that followed also oppose the final rule on these same points. We believe that rotorcraft and general aviation will be affected in an even more severely negative manner than transport category airplane manufacturers. We believe that the unnecessary new costs imposed by application of the final rule will discourage safety-enhancing modifications of existing aircraft. We urge the FAA to act swiftly to amend the final rule as outlined in this comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Roy K. Hange". The signature is fluid and cursive, with a large, stylized initial "R".

Roy Resavage
President

July 15, 1998

Ms. Sharon Miles
Federal Aviation Administration
Rotorcraft Directorate Regulations Group (ASW-111)
Southwest Region Headquarters
2601 Meacham Blvd.
Fort Worth, Texas 76137-4298

Re: *Type Certification Procedures for Changed Products:
Threshold of Eligibility for Exclusion of Rotorcraft from ICPTF Proposal*

Dear Ms. Miles:

On May 2, 1997, the Federal Aviation Administration (FAA) published in the Federal Register a notice of proposed rulemaking (NPRM) titled *A Type Certification Procedures for Changed Products*.@ 62 Fed. Reg. 24288 (May 2, 1997). This proposal was developed by FAA with the assistance of an advisory group called the International Type Certification Procedures Task Force (ICPTF). The comment period on this NPRM closed on September 2, 1997.

Many comments were received in response to the NPRM. FAA has asked the ICPTF, now constituted as a harmonization working group of the Aviation Rulemaking Advisory Committee (ARAC), to review these comments and recommend appropriate responses. For ease of reference, this group continues to refer to itself as the ICPTF. We and you have been involved in the meetings of this group.

As a result of concerns raised by HAI and other representatives of the general aviation community, ICPTF has determined to recommend to the FAA that airplanes having a maximum certificated weight of 6000 pounds or less would be eligible for exclusion from application of the Atop-down@ review process proposed in the NPRM, regardless of engine type. You and we have discussed an appropriate Abreakpoint@ around which to provide similar relief for rotorcraft. You have suggested a two part test for this purpose: rotorcraft having both a maximum certificated weight of 3000 pounds or less and piston engines would be eligible for exclusion from the proposed rule.

We believe that this measure of relief is too restrictive. According to data reported in HAI=s 1998 *Helicopter Annual*, as to helicopters currently in production, only seven types would be eligible under this formula: the Enstrom 280FX, F28-F, F28-F P; Robinson R-22 and R-44; and the Schweizer 300C and 300CB. If helicopters having a certificated maximum weight of 3000

pounds or less are eligible regardless of type of engine, only three additional types currently in production are added to this list: the Schweizer 330SP, Enstrom 480/TH-28, and the Boeing MD 500E. As to helicopters no longer in production (but still arguably active in the U.S. civil helicopter fleet), examination of data from HAI's *1988 Helicopter Annual* indicates that, in addition to the types listed above, only the Hynes Aviation H2 and H5, and the Rogerson-Hiller RH1100C, would be added to the list of eligible types; these three types are not represented in large numbers in the active fleet. The proposed airplane threshold reaches a much larger and broader range of types than the 3000 pound proposal applied to helicopters, even regardless of engine type.

As you know, HAI's goal in this matter is to protect individual owner-operators and small businesses from the cost burdens of top-down review, when those burdens would have negative consequences for aviation safety. We recognize that the ICPTF rule, as explained by Boeing-Seattle's specification of the procedure, provides tools as useful to industry as they are to the FAA for focusing and refining recertification efforts when an existing aeronautical product is changed. However, use of those tools imposes costs. Because the tools embodied in the Boeing-Seattle specification of the ICPTF rule are of value to industry, we anticipate that many entities eligible for exclusion will opt instead to participate in top-down review whenever resources permit. Our concern is that some owner-operators and small businesses will refrain, or be precluded, from incorporating safety-enhancing changes to their aircraft as a result of the cost burden added by the top-down review procedure in the absence of a sufficient exclusion. In agreeing to the 6000 pound threshold for airplanes, FAA and the ICPTF have recognized the validity of this concern. This position also recognizes that exclusion from the ICPTF rule does not mean exclusion from the certification process; it means only that recertification of an aircraft or other certificated product resulting from a change would be conducted against the original certification standards when these were technically applicable, and that later standards would be applied when necessary.

Although relief is stated in terms of maximum certificated weight for airplanes, it may be appropriate to limit relief in terms of some other characteristic for rotorcraft. For example, as to helicopters currently in production, data reported in the *1998 Helicopter Annual* indicates that 23 types would be eligible for exclusion if the breakpoint were an empty weight of 3000 pounds or less. Current production types eligible for exclusion under this formula include: Bell 206B-3, 206L-4 and 407; Boeing MD 500E, MD 530F, MD 520N and MD 600N; Enstrom F28-F, F28-F P, 280FX, and 480/TH-28; Eurocopter Astar BA, Astar B2, BO105 CBS and EC 120; Hiller UH 12E3 and UH 12E3T; Robinson R-22 and R-44; Schweizer 300C, 300CB and 330SP; and the Tridair Helicopters Gemini ST. As to older rotorcraft, data reported in the *1988 Helicopter Annual* indicate that the following types would be eligible for exclusion under this formula: Aerospatiale Gazelle, Lama, Ecureuil, Astar Mark, AS350B1, AS355F2 and Twin Star; Bell 206B-III, 206L-1 and 206L-3; Enstrom F-28F and 280FX; Hynes Aviation H2 and H5; Kawasaki Bell 47 and Hughes 500; MBB 105CB and 105 CBS; McDonnell 500E and 530F; Robinson R22B; Rogerson-Hiller RH1100C and UH12E; Schweizer 300C; and the Soloy-Hiller Bell 47 (600), Bell 47 (900), UH12E and UH12E4. Several of these types are not represented in

large numbers in the active fleet. HAI would support incorporation of this formula into the ICPTF proposal.

Alternately, it may be appropriate to limit the planned exclusion by engine power. According to data reported in the *1998 Helicopter Annual*, setting the exclusion threshold at A less than 600 total shaft horsepower (shp)@ would make the following types currently in production eligible for exclusion from the ICPTF rule: Bell 206B-3; Boeing MD 500E, MD 520N and MD 530F; Enstrom 280FX, F28F and F28-F P and 480/TH-28; Eurocopter EC 120; Hiller UH 12E3T and UH 12E3; Robinson R-22 and R-44; Schweizer 300C, 300CB, and 330SP. Among older types, data reported in the *1988 Helicopter Annual* indicates that the following would be eligible for exclusion under this formula: Aerospatiale Gazelle; Bell 206B-III and 206L-1; Enstrom 280FX and F-28F; Hynes Aviation H2 and H5; Kawasaki Bell 47 and Hughes 500; McDonnell 500E and 530F; Robinson R22B; Rogerson-Hiller UH12E and RH1100C; Schweizer 300C; and the Soloy-Hiller Bell 47 (600), Bell 47 (900), UH12E and EH12E4. HAI would support incorporation of this formula into the ICPTF proposal.

As another alternative, it is possible to set the eligibility threshold by passenger seating capacity. According to data reported in the *1998 Helicopter Annual*, setting the exclusion threshold at A four or fewer passenger seats@ would make the following types currently in production eligible for exclusion from the ICPTF rule: Bell 206B-3; Boeing MD 500E and MD 530F; Enstrom 280FX, F28-F, F28-F P and 480/TH-28; Eurocopter EC 120; Hiller UH 12E3 and UH 12E3T; Robinson R-22 and R-4; and the Schweizer 300C, 300CB and 330SP. Among older types, data reported in the *1988 Helicopter Annual* indicates that the following would be eligible for exclusion under this formula: Aerospatiale Gazelle and Lama; Bell 206B-III; Enstrom 280FX and F-28F; Haynes Aviation H2 and H5; Kawasaki Bell 47 and Hughes 500; MBB 105CB; McDonnell 500E and 530F; Robinson R22B; Rogerson-Hiller UH12E and RH1100C; Schweizer 300C; and the Soloy-Hiller Bell 47(600), Bell 47 (900), UH12E and UH12E4. HAI could support incorporation of this formula into the ICPTF proposal, although with less enthusiasm than it would support either of the other alternate formulas, A less than 600 total shaft horsepower (shp)@ or A empty weight of 3000 pounds or less.@

Finally, HAI would support a gross weight threshold if it were set at A maximum certificated weight of 4500 pounds or less,@ regardless of type of engine. Under this formula, the following helicopters currently in production would be eligible for exclusion from the ICPTF rule, according to data reported in the *1998 Helicopter Annual*: Bell 206B-3 and 206L-4; Boeing MD 500E, MD 530F, MD 520N and MD 600N; Enstrom 280FX, F28-F, F28-F P and 480/TH-28; Eurocopter EC 120; Hiller UH 12E3 and UH 12E3T; Robinson R-22 and R-44; and the Schweizer 300C, 300CB and 330 SP. Among older types, data reported in the *1988 Helicopter Annual* indicates that the following would be eligible for exclusion under this formula: Aerospatiale Gazelle, Astar Mark, Ecureuil, and Lama; Bell 206B-III, 206L-1 and 206L-3; Enstrom 280FX and F-28F; Hynes Aviation H2 and H5; Kawasaki Bell 47 and Hughes 500; McDonnell 500E and 530F; Robinson R22B; Rogerson-Hiller RH1100C and UH12E; Schweizer 300C; and the Soloy-Hiller UH12E, UH12E4, Bell 47 (600) and Bell 47 (900).

HAI believes that any one of the several alternative thresholds discussed in this letter, if adopted and made part of the ICPTF rule, would strengthen that rule by providing limited certification options to entities for whom top-down review may be a significant disincentive to improve their aircraft. Aviation safety will be enhanced by the incorporation of one of these proposals into the final rule.

If you have any comments or questions concerning these proposals, please call.

Sincerely,

Original signed by Roy Resavage

Roy Resavage
President

MEMORANDUM

TO : Mr. William Schultz
Assistant Chair for ARAC 21 Issues

FROM : Joseph Corrao
Director of Regulations

**SUBJECT : *Type Certification Procedures for Changed Products:
Comments Regarding the Disposition of Public Comments on the
Draft Final Rule, Draft of August 4, 1998***

DATE : August 20, 1998

Helicopter Association International (HAI) submits these comments in support of its vote, as a member of the Aviation Rulemaking Advisory Committee (ARAC) Aircraft Certification Procedures Issues Group, not to concur in the disposition of public comments on the Draft Final Rule, "Type Certification Procedures for Changed Products," draft of August 4, 1998. HAI is the non-profit, professional trade association of over 1,400 member civil helicopter organizations in more than 70 nations. Since 1948, HAI has been dedicated to promoting the helicopter as a safe and efficient method of transportation, and to the advancement of the civil helicopter industry.

HAI does not concur with the disposition of comments in the proposed Draft Final Rule in the following particulars (all page references are to the Draft of August 4, 1998):

- ! At page 27, FAA's proposed response to ATA's comment is not presented and therefore cannot be evaluated.
- ! At page 28, FAA proposes to state that, "the potential for requiring compliance with airworthiness amendments adopted after the original type certification will apply in fewer than 1% of all changes that will be considered significant." This conclusion is neither substantiated nor explained. Some basis for this conclusion is required.
- ! At page 39, FAA's proposed response to ATA's comment misses the point. FAA must respond to ATA's point that, "the current STC process is effective in ensuring that changes to an aircraft design are airworthy," and must rebut ATA's recommendation that "FAA exclude STCs from the proposed rule."

- ! At page 43, FAA's response misses the point. The increase in certification costs associated with the proposed rule is not estimated anywhere in the proposed Draft Final Rule and therefore is not "addressed earlier in this preamble."
- ! At page 46, FAA's proposed justification for the narrow measure of relief for rotorcraft is factually inaccurate and insufficient. Piston-powered rotorcraft of 3000 pounds or less MCGW "ordinarily operate in the same environment as larger part 27 or 29 rotorcraft."
- ! At page 51, FAA's proposed response is illogical, unworkable and contrary to the ARAC consensus. FAA proposes to state that, "FAA will consider amendments to the airworthiness standards adopted after the most recent type certification basis in determining whether a change is nonsignificant. For example, later amendments may be of particular relevance in determining whether the assumptions used for certification of the product to be changed remain valid."

This statement is illogical because a later amendment of a regulation is a legal event, while an "assumption used for certification" is an engineering fact. No subsequent legal event can possibly change an engineering fact.

FAA's proposed statement is unworkable because, according to its terms, every proposed change to a product will be rendered "significant" by every change in applicable regulations adopted since certification of the product.

FAA's proposed statement is contrary to the consensus of the ARAC working group. The working group concluded, and repeatedly confirmed, that the "change" that is the subject matter of the proposed rule and the triggering event for a certification evaluation, is a proposed change to the product, not a change in the regulations.

- ! At page 77, ' 21.101(b), FAA's proposed measure of relief for rotorcraft is too narrow. Relief should be granted to rotorcraft having a total of 600 shaft horsepower (SHP) or less regardless of engine configuration. In the alternative, relief should be granted to rotorcraft having three or fewer passenger seats regardless of engine configuration, or to rotorcraft of 4500 pounds MCGW or less regardless of engine configuration.
- ! At page 78, ' 21.101(c)(1), the phrase, "combined with all previous relevant changes" is misleading and contrary to the ARAC consensus. As the working group facilitator noted in her summary of consensus points dated July 8, 1998, "The effect of change takes into account all previous relevant changes to the product." The FAA's phrase suggests that the focus of inquiry is "the change," whereas the working group agreed that the focus is on "the effect of change." Moreover, by calling this element out separately, the FAA's proposed language may mislead the reader into thinking that an inquiry must somehow

sum effects, whereas the working group agreed that the effect of all previous relevant changes necessarily and automatically would be reflected in an inquiry into whether, in light of the most recent proposed change, the general configuration and principles of construction are retained and the assumptions used for certification remain valid .

- ! At page 79, ' 21.101(c)(2), FAA's proposed language should be clarified by addition of the sentence, "A new demonstration of compliance is not required for items that are not affected by the change."

We look forward to revisions in the proposed disposition of public comments and final rule that will enable HAI to concur to accept the document and forward it to FAA for appropriate rulemaking action.

Sincerely,

Original signed by Joe Corrao

Joseph Corrao
Director of Regulations

MEMORANDUM

TO : Mr. William Schultz
Assistant Chair for ARAC 21 Issues

FROM : Joseph Corrao
Director of Regulations

SUBJECT : Type Certification Procedures for Changed Products:
Supplementary Comments Regarding the Disposition of
Public Comments on the Draft Final Rule,
Draft of August 4, 1998

Docket No. 28903

DATE : September 1, 1998

BY FAX : FAA Docket Clerk: (202) 267-5919
GAMA: (202) 842-4063

Helicopter Association International (HAI) submits this Supplementary Comment in support of its vote, as a member of the Aviation Rulemaking Advisory Committee (ARAC) Aircraft Certification Procedures Issues Group, not to concur in the disposition of public comments on the Draft Final Rule, "Type Certification Procedures for Changed Products," draft of August 4, 1998. HAI is the nonprofit, professional trade association of over 1,400 member civil helicopter organizations in more than 70 nations. Since 1948, HAI has been dedicated to promoting the helicopter as a safe and efficient method of transportation, and to the advancement of the civil helicopter industry.

This Supplementary Comment clarifies points made in HAI's comments of August 20, 1998, captioned "Type Certification Procedures for Changed Products: Comments Regarding the Disposition of Public Comments on the Draft Final Rule, Draft of August 4, 1998."

1. It is inappropriate and unworkable to consider intervening amendments of applicable certification regulations when determining whether a proposed change is nonsignificant.

At page 51 of the proposed Final Rule, FAA states that, "FAA will consider amendments to the airworthiness standards adopted after the most recent type certification basis in determining whether a change is nonsignificant. For example, later amendments may be of particular relevance in determining whether the assumptions used for certification of the product to be changed remain valid."

Under the terms of the proposed Final Rule, one determines whether a proposed change is nonsignificant by examining whether the general configuration and principles of construction are retained, and whether the assumptions used for certification remain valid. Whether the general configuration and principles of construction are retained is an inquiry the answer to which is not affected by an intervening amendment

to an applicable certification regulation. Configuration and construction principles are matters of historical engineering fact that are not altered by subsequent changes in regulations.

The assumptions used for certification of the product are validated or invalidated by the product's post-certification service history, not by regulatory fiat. If post-certification service history indicates that an unsafe condition exists, the aircraft is subjected to remedial requirements through an Airworthiness Directive (AD). If a change is proposed to such an aircraft, the service history that invalidated the previous certification assumption is accounted for through consideration of the AD. No separate review of post-certification regulation changes is necessary.

Moreover, in determining whether a proposed change is nonsignificant, a separate review of post-certification regulation changes necessarily leads to the erroneous conclusion that all proposed changes to the aircraft are significant. FAA must justify each amendment it promulgates to regulations. In a review that focuses on intervening regulatory amendments -- that is, amendments to applicable regulations adopted between the time the product was certificated in the configuration to be changed and the time the change under review is proposed -- every amendment must be seen as rendering each proposed change significant in light of the justification for that amendment.

However, if an unsafe condition had existed, an AD would have been issued against the aircraft. If no unsafe condition exists, there is no reason, based on service history, to consider any certification assumption invalid. Separate consideration of intervening regulatory amendments is a red herring, a distractor that leads to erroneous conclusions.

These erroneous conclusions -- that a proposed change is significant when it is not -- makes this provision of the proposed Final Rule entirely unworkable. FAA and the Joint Aviation Authorities (JAA) have agreed with Industry that periodic recertification of an aircraft with an acceptable service history would be unnecessarily and unacceptably burdensome. Separate consideration of intervening amendments would provoke recertification regardless of acceptable service history, a back-door way of imposing the burdens of periodic recertification under another name.

FAA's proposed statement is contrary to the consensus of the ARAC working group. The working group concluded, and repeatedly confirmed, that the "change" that is the subject matter of the proposed rule and the triggering event for a certification evaluation, is a proposed change to the product, not a change in the regulations.

The provision quoted above should be deleted from the Final Rule.

2. The effects of all previous relevant changes are subsumed, and automatically accounted for, in the evaluation of a proposed change. It is inappropriate to suggest that the effects of all previous relevant changes must be summed in a separate inquiry.

Under the terms of the proposed Final Rule, a proposed change that is significant triggers recertification of the changed portion of the product, proven against the amendment current at the time of application for approval of the change. Incremental changes may be nonsignificant individually, but may "sum" to significance, either by gradually changing the general configuration and principles of construction, or by cumulatively rendering the assumptions used for certification invalid.

Whether the general configuration and principles of construction are retained will be evident upon evaluation of the latest proposed change in comparison to the product as most recently certificated. No

separate "summing" of the effects of incremental changes is necessary. Moreover, a separate "summing" is undesirable because such an exercise is standardless and subjective without reference to the state of the product before the proposed change.

Whether the assumptions used for certification remain valid is evident upon evaluation of the product as most recently certificated in comparison to the specifications that will result if the change is performed as proposed. Even if an incremental change is small, if it results in a specification that is outside the parameters of earlier assumptions, this fact will be evident upon consideration of the proposed change itself; no separate summing of effects of earlier changes is necessary.

Moreover, a separate "summing" is undesirable in this context, too, because such an exercise is standardless and subjective without reference to the state of the product before the proposed change.

The proposed provision quoted above will have the effect of triggering recertification whenever the proposed change affects a previously changed area of the product, or strikes someone in authority as "large" in the abstract, regardless of whether the general configuration and principles of construction are retained, and whether the assumptions used for certification remain valid. This result is contrary to the consensus of the ARAC Working Group, does not promote safety, and will impose unnecessary economic hardship on manufacturers, modifiers and owners of type certificated products.

The provision quoted above should be deleted from the Final Rule.

3 The threshold of relief for rotorcraft should be 600 pounds total shaft horsepower, or four or fewer total seating capacity, or 3 or fewer passenger seats, or 4500 maximum certificated gross weight (MCGW).

In a letter dated August 26, 1998, and received at HAI on August 31, 1998, FAA's Rotorcraft Directorate rejects Industry's arguments in favor of a larger measure of relief for rotorcraft. The Rotorcraft Directorate is the principal agency for rotorcraft certification in the United States. A copy of the Rotorcraft Directorate's letter of August 26, 1998, is attached for inclusion in Docket No. 28903, as is HAI's letter of June 30, 1998, to which the Rotorcraft Directorate's letter responds.

In documents submitted to the International Type Certification Procedures Working Group, HAI has demonstrated that during the past 10 years, not one rotorcraft accident has been attributed to a weakness in the certification procedure for changes. This finding is based on review of ten years of accident data compiled by the National Transportation Safety Board (NTSB) and culled from NTSB data files by both NTSB itself and the National Aviation Safety Data Analysis Center (NASDAC). Copies of HAI's analyses are attached to this comment.

The Rotorcraft Directorate has not attempted to refute this analysis. It appears that there is no documentable safety justification for application of this rule to rotorcraft.

HAI's letter of June 30, 1998, identifies rotorcraft by make and model to demonstrate that the measure of relief offered in the proposed Final Rule is too small. The Rotorcraft Directorate merely asserts, without supporting analysis, that the proffered measure is sufficient.

Distilled, the Rotorcraft Directorate's argument is that, although very small helicopters are operationally distinct from larger helicopters, most helicopters are not operationally distinct from one another, so relief can be provided only for very small helicopters. The Rotorcraft Directorate's argument is not supported

by data, and overlooks the fact that operational distinctions are not clear among fixed-wing aircraft, yet all fixed-wing aircraft of 6000 pounds maximum certificated gross weight (MCGW) are granted relief in the proposed Final Rule. Charter customers fly Mooney 201s and Raytheon KingAirs, just as they fly Robinson R22s and Bell JetRangers. There is no operational reason to distinguish Mooney 201s and Robinson R22s from Raytheon KingAirs and Bell JetRangers. The relief granted to fixed-wing operators in the proposed Final Rule is in recognition of the fact that the proposed Final Rule may impose costs that discourage financially small entities from undertaking safety-enhancing changes to their aircraft. The same concern is compelling in the rotorcraft world, where financially small entities use a variety of equipment in a variety of missions.

As we pointed out in our letter of June 30, 1998, a proper measure of relief for rotorcraft “does not mean exclusion from the certification process; it means only that recertification of an aircraft or other certificated product resulting from a change would be conducted against the original certification standards when these were technically applicable, and that later standards would be applied when necessary.” HAI’s request for adequate relief from the proposed Final Rule has nothing to do with “fear of the unknown,” but rather with clear thinking about the unintended but likely consequences of this rule. We would like to become advocates of this proposal; as we noted in our letter of June 30, 1998, “We recognize that the ICPTF rule, as explained by Boeing-Seattle’s specification of the procedure, provides tools as useful to industry as they are to the FAA for focusing and refining recertification efforts when an existing aeronautical product is changed. However, use of those tools imposes costs. Because the tools embodied in the Boeing-Seattle specification of the ICPTF rule are of value to industry, we anticipate that many entities eligible for exclusion will opt instead to participate in top-down review whenever resources permit. Our concern is that some owner-operators and small businesses will refrain, or be precluded, from incorporating safety-enhancing changes to their aircraft as a result of the cost burden added by the top-down review procedure in the absence of a sufficient exclusion. In agreeing to the 6000 pound threshold for airplanes, FAA and the ICPTF have recognized the validity of this concern.”

The Rotorcraft Directorate has failed to support its assertions by reference to data, inference from data, or reasoned argument.¹ In the face of significant data, reasoned discussion and industry consensus contrary to the Rotorcraft Directorate’s assertions, the rotorcraft community should be granted the relief it seeks from the burdensome application of this proposed Final Rule.

Respectfully Submitted,

Original signed by Roy Resavage

Roy Resavage
President

¹ In its letter of August 26, 1998, the Rotorcraft Directorate also asserts, in connection with a proposed “Safety Resource Evaluation Chart,” that, “The rotorcraft industry has been challenged to develop a chart or tool that is appropriate for use by the rotorcraft community. To date, nothing has been presented for consideration.” This statement is misinformed or disingenuous. Representatives of the rotorcraft community have met with their counterparts in the transport category airplane community and work to develop tools appropriate to rotorcraft are underway. As the Rotorcraft Directorate should know, it has been estimated that this effort will take between one and two years to reach fruition.